

Title (en)

METHOD AND APPARATUS FOR ROBOT TO GRAB THREE-DIMENSIONAL OBJECT

Title (de)

VERFAHREN UND VORRICHTUNG FÜR ROBOTER ZUM GREIFEN EINES DREIDIMENSIONALEN OBJEKTS

Title (fr)

PROCÉDÉ ET APPAREIL PERMETTANT À UN ROBOT DE SAISIR UN OBJET TRIDIMENSIONNEL

Publication

EP 4166281 A4 20240313 (EN)

Application

EP 20947296 A 20200729

Priority

CN 2020105586 W 20200729

Abstract (en)

[origin: EP4166281A1] Provided is a method for a robot to grab a three-dimensional object. The method comprises: determining the current position and posture of a visual sensor of a robot relative to a three-dimensional object; acquiring a grabbing template of the three-dimensional object, wherein the grabbing template comprises a designated grabbing position and posture of a visual sensor relative to the three-dimensional object; determining whether the grabbing template further comprises at least one reference grabbing position and posture of the visual sensor relative to the three-dimensional object, wherein the reference grabbing position and posture are generated on the basis of the designated grabbing position and posture; and on the basis of a determination result, generating, by using the grabbing template and the current position and posture, a grabbing position and posture of the robot. In the present disclosure, a movement path of the robot from the current position and posture to the grabbing position and posture is optimized by using the reference grabbing position and posture, thereby improving the flexibility of grabbing, improving the speed and efficiency of grabbing, and also saving energy. The method is simple and easily implemented, the amount of data calculation is small, and no expensive three-dimensional camera is needed, thereby saving time and economic costs.

IPC 8 full level

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CPC (source: EP US)

B25J 9/161 (2013.01 - US); **B25J 9/1612** (2013.01 - US); **B25J 9/163** (2013.01 - US); **B25J 9/1671** (2013.01 - US); **B25J 9/1692** (2013.01 - US); **B25J 9/1697** (2013.01 - EP US); **B25J 13/089** (2013.01 - US); **G06T 7/74** (2017.01 - EP); **G05B 2219/39057** (2013.01 - EP); **G05B 2219/40543** (2013.01 - EP); **G06T 2207/20081** (2013.01 - EP); **G06T 2207/20084** (2013.01 - EP); **G06T 2207/30164** (2013.01 - EP)

Citation (search report)

- [XY] CN 109407603 A 20190301 - BEIJING ORION STAR TECH CO LTD
- [Y] CN 106845354 A 20170613 - INST AUTOMATION CAS
- [Y] CN 110706285 A 20200117 - UNIV ARMY ENGINEERING PLA
- [Y] CN 110076772 A 20190802 - ZHEJIANG DAHUA TECHNOLOGY CO
- See also references of WO 2022021156A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 4166281 A1 20230419; **EP 4166281 A4 20240313**; CN 116249607 A 20230609; US 2023278198 A1 20230907; WO 2022021156 A1 20220203

DOCDB simple family (application)

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